

REMARKS/ARGUMENTS

Claims 9, 10 and new claim 12 are pending in this application. Claim 8 has been canceled without prejudice or disclaimer. Claims 9 and 10 have been amended. No new matter has been added by the amendments or the addition of new claim 12.

Claim Rejections under 35 U.S.C. §102

Claims 8-10 have been rejected under 35 U.S.C. §102(e) as being anticipated by Zou et al. (Zou).

Claim 9 has been amended to place the claim in independent form and claim 8 has been canceled without prejudice or disclaimer. Applicants respectfully assert that claims 9, 10 and new claim 12 are patentable over Zou for the following reasons.

Claims 9-10 and 12 are supported in the originally filed application by Example 2, the description thereof beginning on page 19, line 8 and extending to page 22, line 6 of the specification. New claim 12 is supported by page 19 of the specification, lines 19-21.

According to the claimed invention, a cobalt-containing magnetic layer is formed on a substrate either directly or with an intervening under layer and the magnetic layer is heated in a first step. Then, a protective layer is formed on the magnetic layer and a second step of heating is performed of the formed layers under atmospheric pressure at a temperature no higher than 250°C. As set forth in the specification, the procedure of Example 2 is the same as that of Example 1, except that annealing is carried out at a low temperature, i.e. no higher than 250°C. As a result of the annealing step (second heating step), the stacking fault density is decreased. See page 8, lines 8-10 of the specification, for example.

Further, as explained in the specification, it is impractical from a manufacturing viewpoint to hold the magnetic recording media in a sputtering vacuum chamber after the layers are formed for the annealing process. Accordingly, the magnetic recording media are removed from the vacuum chamber. Before removing the recording media from the vacuum chamber, however, a protective film is formed on the magnetic layer to protect the film from oxidation. To prevent the protective film from diffusing into the magnetic film during the annealing step, it is necessary not to heat the magnetic medium above 250°C. See page 19, lines 14-23 of the specification, for example, which discusses that when the protective film is made of a carbonatious material, the heating of the layers is conducted at a temperature below 250°C to prevent the protective film from diffusing into the magnetic film. In Example 2 set forth in the specification, the sample (after film formation) is heated in a constant temperature oven at 220°C for eight hours.

In the cited reference of Zou, the magnetic recording medium has a cobalt-containing film on which a protective film is formed. The protective film is, for example, a CrTi protection overcoat layer (see col. 17, lines 1-6 of Zou). After the film formation, the reference discloses post-deposition rapid thermal annealing. Specifically, Zou discloses that thermal annealing experiments were conducted at temperatures in the range of 250°C to 450°C. Figure 3 of Zou shows the coercivity H_c and magnetization M_s as functions of the annealing temperature. In order to achieve the objects of the invention disclosed by Zou, the annealing temperature is required to be greater than 250°C, which is outside the range of the heating temperature claimed by Applicants in the comparable second step of heating set forth in claim 9.

As mentioned in the Office Action, Zou discloses a heating step in column 15, lines 43-44 that occurs at temperatures less than 250°C. However, the heating disclosed in this step is equivalent to the preheating of the media in preparation for the step of forming the magnetic film and the deposition of the other layers. See column 15, lines 39-41 of Zou, for example, which describes preheating the substrate which leads to deposition of layers occurring at temperatures of less than 250°C. Accordingly, Zou does not disclose the claimed second step of heating set forth in claim 9, and therefore the 35 U.S.C. 102(e) rejection of claim 9 as being anticipated by Zou should be withdrawn.

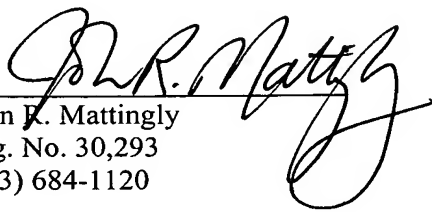
Claims 10 and 12 are dependent claims and are patentable for further setting forth that there are no limitations that are not disclosed in the prior art. Further, each of these claims is allowable at least for depending from an allowable base claim.

CONCLUSION

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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